

118101

Attorney/LA

JRB/DGV/tdg

PTO Due Date:

February 15, 2004

DATE FILED:

February 17, 2004

Venable Filing Number

Atty. Docket No: 32011-165642

Title: METHOD OF PRODUCING  
SEMICONDUCTOR DEVICES USING  
A HYDROGEN PEROXIDE-WATER  
MIXTURE (AS AMENDED)

Application No: 09/639,163

Filing Date: August 16, 2000

Patent No.:

Issue Date:

Trademark:

Trademark Reg. No:

Opposition/Cancellation No:

The following items were received from Venable, Washington, D.C., by the U.S. Patent &amp; Trademark Office:

## U.S. PTO FEES ENCLOSED

- ☐ Utility Patent Application Transmittal  
☐ Fee Transmittal Letter  
☐ New U.S. Utility Application (15 pages of specification/29 claims/abstract)  
☐ Formal Drawings (5 sheets for FIGS. 1-6)  
☐ Invention Declaration  
☐ Letter to Examiner  
☐ Translation of International Application  
☐ New U.S. TM Application (specimens)  
☐ Rule 53(d) Continued Prosecution Application  
☐ Letter Resubmitting Assignment  
☐ Rule 53(b) Continuation or Divisional Application (*attach copy of specification, claims, drawings & declaration*)  
☐ Priority Document-Cert. Copy of Appln.#: ; Country  
☐ Date Filed:  
☐ Request for Continued Examination (RCE) under 37 CFR 1.114  
☐ Request for Reconsideration  
☐ Application Data Sheet  
☐ Assignment w/PTO Form 1595 Cover Sheet  
☐ IDS w/PTO Form-1449  
☐ International Search Report  
☐ Amendment/☐ Preliminary Amendment  
☐ Petition/Request for Extension of Time (one mo. ext.)  
☐ Notice of Appeal  
☐ Appeal Brief (*In triplicate*)  
☐ Reply Brief (*In triplicate*)/ ☐ Request for Oral Hearing  
☐ Confirmation of Hearing Petition  
☐ Issue Fee Transmittal  
☐ Certificate of Correction  
☐ Maintenance Fee Transmittal  
☒ Petition to Withdraw Holding of Abandonment  
☐ Response to Notice to File Missing Parts  
☐ Response to Notice to File Missing Requirements  
☐ Response to Restriction Requirement  
☒ Exhibit A (copy of January 24, 2002 filing)  
☐ Sequence Listing - CDR Enclosed? ☐ Yes ☐ No  
☒ Exhibit B (copy of Office Action mailed April 24, 2002)  
☒ Exhibit C (copy of September 12, 2003 filing)  
☐ Request to Rescind Non-Publication Request  
☐ A copy of the Notice of Non-Recordation of Document  
☐ Return Postcard  
☐ Notice of Change of Attorney Docket Number  
☐ Other: (*Please describe below*)



- ☐ Filing Fee  
☐ Surcharge Fee  
☐ Additional Claim Fee  
☐ Recordation/Indexing Fee  
☐ IDS Fee  
☐ Extension Fee  
☐ Notice of Appeal Fee  
☐ Brief on Appeal Fee  
☐ Oral Hearing Request Fee  
☐ Petition Fee  
☐ Issue Fee  
☐ Publication Fee  
☐ Maintenance Fee  
☐ TM Statement of Use  
☐ 8 Affidavit Fee  
☐ 8 and 15 Affidavit  
☐ TM Renewal Application Fee  
☐ Notice of Opposition Fee  
☐ TM Extension of Time Fee

Total Fees Paid

☐  
☐

Check Number Attached  
 Charge Deposit Account No. 22-0261\*  
☐ Yes ☐ No

\*If the Deposit Account was used, was a copy of this form sent to Accounting?

#523695

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Kaori TAI

Appl. No. 09/639,163  
Confirmation No. 3891

Filed: August 16, 2000

For: METHOD OF PRODUCING  
SEMICONDUCTOR DEVICES USING A  
HYDROGEN PEROXIDE-WATER  
MIXTURE (AS AMENDED)

Art Unit: 2823

Examiner: W. D. Coleman

Atty. Docket No. 32011-165642

Customer No.

**26694**  
PATENT TRADEMARK OFFICE

**PETITION TO WITHDRAW HOLDING OF ABANDONMENT**

Assistant Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Applicant hereby petitions the Commissioner under 37 C.F.R. § 1.181(a)(3) to withdraw the Notice of Abandonment mailed December 15, 2003 in the above-identified application and pass the case to issue.

**STATEMENT OF FACTS**

In an Office Action mailed October 24, 2001, the Examiner objected to the drawings filed in the above-identified application. In making the objection, the Examiner indicated that Figures 3(A)-3(F) and Figure 4 should be designated by a legend such as --Prior Art-- because only that which is old was illustrated. On January 24, 2002, two sheets of formal drawings were filed with an accompanying amendment in response to the Office Action mailed October 24, 2001. In that submission, the sheet containing Figures 3(A)-3(F) contained one label for all figures and the sheet containing Figure 4 contained one label for Figure 4. A true and correct copy of the Figure 4 that was submitted on January 24, 2002, as well as the stamped filing receipt indicating that the drawings were received is enclosed herewith as Exhibit A.

Thereafter, Applicant received a second Office Action mailed on April 24, 2002. In the second Office Action (Paper No. 8), the Examiner indicated that the drawing proposals submitted on January 24, 2002 were not acceptable because the "Prior Art" label should be listed under each figure, and Figures 3(A)-3(F) were not individually labeled as "Prior Art." A true and correct copy of Paper No. 8 is attached as Exhibit B. Figure 4 was properly labeled because Figure 4 was individually labeled as "Prior Art," as indicated by Exhibit A.

On July 31, 2003, a Notice of Allowance and Notice of Allowability were mailed. The Notice of Allowability indicated that corrected drawings including the changes required by Paper No. 9 must be submitted. On February 17, 2004, Applicant's Representative conducted a telephonic interview with the Examiner, who indicated that the Notice of Allowability should have read Paper No. 8, not Paper No. 9 and that the number 9 was inadvertently typed. Therefore, the Notice of Allowability required that each Figure 3(A)-3(F) be individually labeled as "Prior Art", as required by Paper No. 8.

On September 12, 2003, Applicant filed a Submission of Formal Drawings, which included properly labeled formal drawings for Figures 3(A)-3(F), in response to the Notice of Allowance. A true and correct copy of the Submission of Formal Drawings, as well as the stamped filing receipt indicating that the drawings were received is enclosed herewith as Exhibit C. Shortly thereafter, the issue fee was paid.

On December 15, 2003, a Notice of Abandonment was mailed indicating that the above-identified application was abandoned because Applicant failed to timely file corrected drawings. After repeated attempts to learn of the reason for abandonment, Applicant finally received a message from the abandonment contact person (Mr. Tom Hawkins), on January 30, 2004, and learned that the above-identified application was abandoned because a properly labeled Figure 4 was not received. Applicants respectfully disagree.

Based on the foregoing, Applicants respectfully submit that the Notice of Abandonment was issued due to PTO error. Exhibit A proves that a properly labeled Figure 4 was received by the Patent Office on January 24, 2002. Exhibit C proves that properly labeled Figure 3(A)-3(F) were received by the Patent Office on September 12, 2003. Accordingly, Applicant has fully responded to the Examiner's objection to the drawings in the Office Action mailed October 24, 2001, and complied with the Examiner's request that Figures 3(A)-3(F) and Figure 4 be labeled as "Prior Art". Therefore, Applicant respectfully submits that this case is not in fact abandoned and should be passed to issue. Further, no petition fee should be due. Applicants submit that this petition is filed within the requisite two month period because it is being filed on the next succeeding business day following a Federal Holiday, as is permitted by 37 C.F.R. §1.7(a).

Should the Commissioner find that the petition and supporting evidence are insufficient, and do not satisfy the requirements of 37 C.F.R. § 1.181(a)(3) to withdraw the Notice of Abandonment, Applicant respectfully requests this petition to be considered under 37 C.F.R. § 1.182, because the circumstances underlying this petition are unusual and no specifically provided for. Authorization is given to charge Deposit Account No. 22-0261 with any fees due for such a petition.

In the alternative, should the Commissioner find that this petition and supporting evidence are insufficient to meet the standards of 37 C.F.R. § 1.182, Applicant respectfully requests this petition to be considered as a petition under 37 C.F.R. § 1.137(a) for unavoidable abandonment. Specifically, and as supported by all of the foregoing, the failure to submit formal drawings was unavoidable because Applicant believed all formal drawings were timely submitted and received by the U.S.P.T.O.

Finally, in the alternative, should the Commissioner find that this petition and supporting evidence are insufficient to meet the standards of 37 C.F.R. §1.137(a), Applicant respectfully

requests this petition to be considered as a petition under 37 C.F.R. § 1.137(b), for unintentional abandonment. Specifically, and as supported by the all of the foregoing, the failure to submit formal drawings was unintentional because Applicant believed all formal drawings were timely submitted and received by the U.S.P.T.O.

Applicant respectfully submits that no fee is due for this petition, because the Notice of Abandonment was issued in error. However, in the event of a contrary finding, authorization is hereby given to charge Deposit Account No. 22-0261 with any fees due.

Respectfully submitted,

Date: \_\_\_\_\_

\_\_\_\_\_  
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P.O. Box 34385  
Washington, D.C. 20043-9998

Telephone: (202) 344-4000

Telefax: (202) 344-8300

#523533

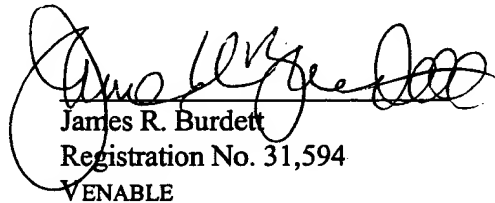
requests this petition to be considered as a petition under 37 C.F.R. § 1.137(b), for unintentional abandonment. Specifically, and as supported by the all of the foregoing, the failure to submit formal drawings was unintentional because Applicant believed all formal drawings were timely submitted and received by the U.S.P.T.O.

Applicant respectfully submits that no fee is due for this petition, because the Notice of Abandonment was issued in error. However, in the event of a contrary finding, authorization is hereby given to charge Deposit Account No. 22-0261 with any fees due.

Respectfully submitted,

Date:

2/17/2004



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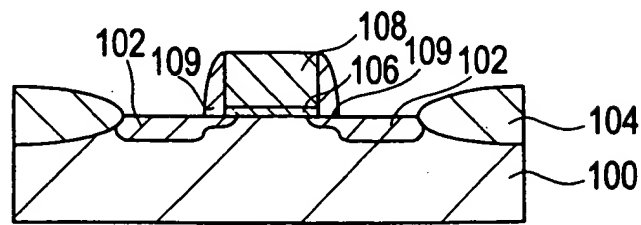
Appl. No. 09/639,163

## **Exhibit A**

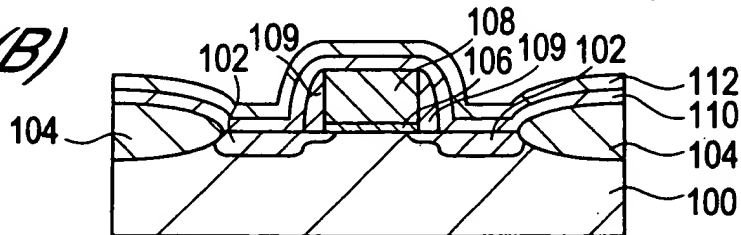




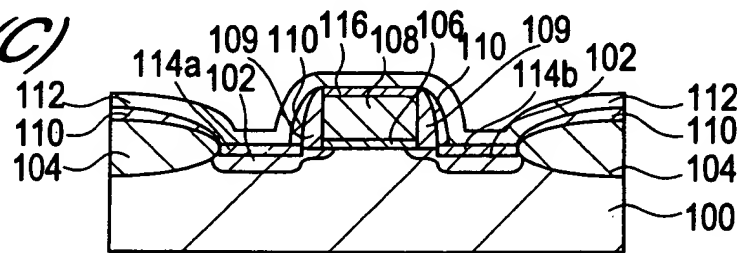
*FIG. 3(A)*



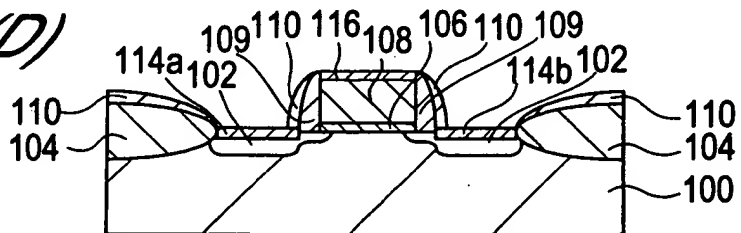
*FIG. 3(B)*



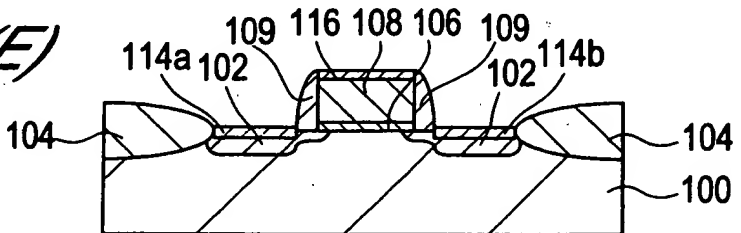
*FIG. 3(C)*



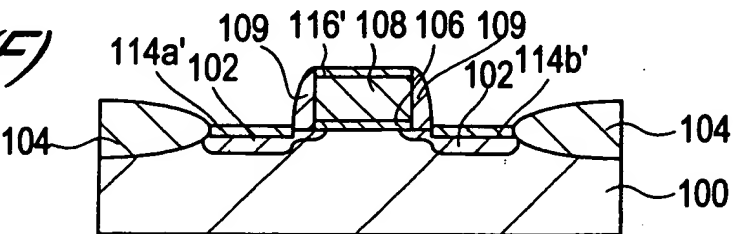
*FIG. 3(D)*



*FIG. 3(E)*

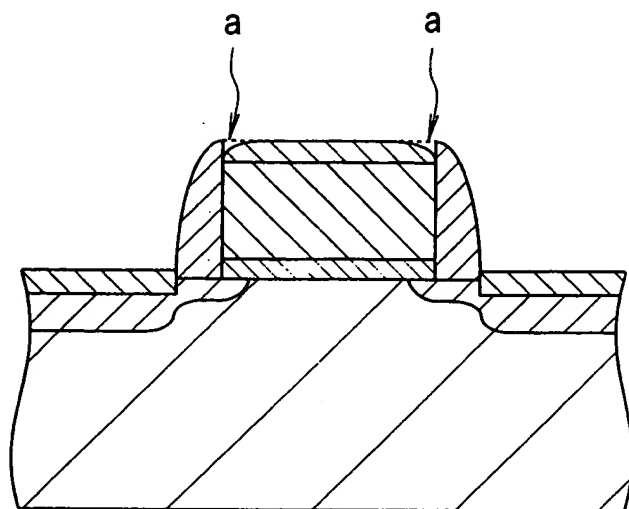


*FIG. 3(F)*



PRIOR ART

*FIG. 4*



**PRIOR ART**

Appl. No. 09/639,163

## **Exhibit B**



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/639,163	08/16/2000	Kaori Tai	32011-165642	3981

7590

04/24/2002

Robert J Frank  
Venable  
Post Office Box 34385  
Washington, DC 20043-9998

EXAMINER

COLEMAN, WILLIAM D

ART UNIT

PAPER NUMBER

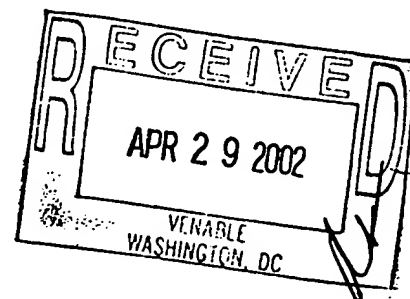
2823

DATE MAILED: 04/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

## DOCKETED

CLIENT/MATTER #2011-165642 ATTY JRB  
DUE DATE July 24, 2002 / Response to 1st office action  
FINAL DEADLINE October 24, 2002  
DKTED BY Jen / BN



# Office Action Summary

Application No.

09/639,163

Applicant(s)

TAI, KAORI

Examiner

W. David Coleman

Art Unit

2823

— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 17 and 18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 24 January 2002 is: a) ☐ approved b) ☒ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Drawings*

1. Applicant's newly submitted drawing proposals are not acceptable. The term "Prior Art" label should be listed under each figure.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4, 5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants admitted prior art in view of Derderian et al., U.S. Patent 6,245,191.

3. Applicant's admitted prior art discloses a semiconductor method substantially as claimed.

Pertaining to claims 1 and 8, Applicant's admitted prior art teaches a method of producing semiconductor devices by cobalt silicide technology with titanium nitride film as the cap film, comprising:

removing titanium nitride film 112 using an ammonium-hydrogen peroxide-water mixture (see disclosure page 3, lines 17-19). However, Applicants admitted prior art fails to omit the ammonium in the etching step. Derderian teaches removing a titanium nitride film comprising a 30% hydrogen peroxide solution in water (column 4, lines 40-50). In view of Derderian, it would have been obvious to one of ordinary skill in the art to use only a hydrogen-peroxide and water mixture in Applicant's admitted prior art because characteristic parameters of the etching

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solution droplet include the chemical potential, such as surface tension, chemical reactant and reaction product boundary layers within the etching solution (column 4, lines 25-49).

4. Pertaining to claims 4 and 5, Applicant's admitted prior art teaches a method of producing semiconductor devices, comprising:

forming cobalt film 110 on the top surface of a silicon substrate 100, which has a gate electrode 108 and a diffusion layer 102;

forming titanium nitride 112 as the cap film on the top surface of cobalt film 110;

selectively reacting the silicon of silicon substrate 100 and the cobalt film 110; and

removing titanium nitride film 112 using ammonium hydrogen peroxide-water mixture (see disclosure, page 3, lines 17-19). However, Applicants admitted prior art teaches fails to omit the ammonium in the etching step. Derderian teaches removing a titanium nitride film comprising a 30% hydrogen peroxide solution in water (column 4, lines 40-50). In view of Derderian, it would have been obvious to one of ordinary skill in the art to use only a hydrogen-peroxide and water mixture in Applicant's admitted prior art because under ideal conditions, a bead of etching solution droplet would react completely with film 20 with all available etchant within etching solution droplet and contact angle  $\theta$  would remain substantially orthogonal to the plane of film being etched (column 5, lines 44-47).

5. Claims 2, 3, 6, 7, 10, 11, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art in view of Derderian et al., U.S. Patent 6,245,191 B1 as applied to claims 1, 4, 5 and 8 above, and further in view of the following comments.

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6. Pertaining to claims 2, 3, 6, 7, 10, 11, 14 and 15, Applicants admitted prior art discloses a semiconductor process substantially as claimed as discussed above. Given the teaching of the references, it would have been obvious to determine the optimum thickness, temperature as well as condition of delivery of the layers involved. See *In re Aller, Lacey and Hall* (10 USPQ 233-237) "It is not inventive to discover optimum or workable ranges by routine experimentation. Note that the specification contains no disclosure of either the critical nature of the claimed ranges or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the chosen dimensions are critical. *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Any differences in the claimed invention and the prior art may be expected to result in some differences in properties. The issue is whether the properties differ to such an extent that the difference is really unexpected. *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986)

Appellants have the burden of explaining the data in any declaration they proffer as evidence of non-obviousness. *Ex parte Ishizaka*, 24 USPQ2d 1621, 1624 (Bd. Pat. App. & Inter. 1992).

An Affidavit or declaration under 37 CFR 1.132 must compare the claimed subject matter with the closest prior art to be effective to rebut a prima facie case of obviousness. *In re Burckel*, 592 F.2d 1175, 201 USPQ 67 (CCPA 1979).

Claims 9, 12, 13 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art FIGS. 3A-3E in view of Jang, U.S. Patent 6,051,496.

7. Applicants admitted prior art discloses a semiconductor process substantially as claimed as discussed above. Applicant's admitted prior art teaches forming cobalt film 110 on the top surface of a silicon substrate 100, which has a gate electrode 108 and a diffusion layer 102;



Art Unit: 2823

forming titanium nitride **112** as the cap film on the top surface of cobalt film **110**; selectively reacting the silicon of silicon substrate **100** and the cobalt film **110**; and removing titanium nitride film **112** using a hydrogen peroxide-water mixture (see disclosure, page 3, lines 17-19). However, Applicant's admitted prior art fails to disclose a second portion of the titanium nitride film remaining after the first removal step. Jang teaches a removing a second portion of said titanium nitride film as claimed by Applicant. See **FIGS. 3A-3C** where Jang teaches a first removal step of removing a first portion titanium nitride **200**, and a second removal step of removing said titanium nitride film of a second portion **210**. In view of Jang, it would have been obvious to one of ordinary skill in the art to incorporate the second removal step of titanium nitride film in Applicant's admitted prior art because during the short time the first CMP is performed, the polishing action is more local in that the polishing pad does not reach all the way down to the lower regions (column 6, lines 60-64).

***Claim Rejections - 35 USC § 112***

8. Claims 9-16 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The process of “removing a first portion of said titanium nitride film by a first removal step using an ammonia-hydrogen peroxide-water mixture such that a second portion of said titanium film remains; and removing said second portion of”’. The terms underlined in claims 9, 12, 13 and 16 were not taught in the disclosure.


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*Conclusion*

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to W. David Coleman whose telephone number is 703-305-0004. The examiner can normally be reached on 9:00 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael M. Fahmy can be reached on 703-308-4918. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7721 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

  
W. David Coleman  
Examiner  
Art Unit 2823

WDC  
April 19, 2002

**Notice of References Cited**Application/Control No.  
09/639,163Applicant(s)/Patent Under  
Reexamination  
TAI, KAORIExaminer  
W. David ColemanArt Unit  
2823

Page 1 of 1

**U.S. PATENT DOCUMENTS**

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-6.051.496	04-2000	Jang	438/687
	B	US-6,245,191	06-2001	Derderian et al.	156/345
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

**FOREIGN PATENT DOCUMENTS**

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

**NON-PATENT DOCUMENTS**

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Appl. No. 09/639,163

## **Exhibit C**

115278

Attorney/  
PTO Due Date  
DATE FILED :

JRB/DGV/tdg

October 31, 2003

September 12, 2003

Venable Filing Number

Atty. Docket No: 32011-165642

Title: METHOD OF PRODUCING  
SEMICONDUCTOR DEVICES USING  
A HYDROGEN PEROXIDE-WATER  
MIXTURE (AS AMENDED)

Application No: 09/639,163

Filing Date: August 16, 2000

Patent No. :

Issue Date:

Trademark:

Trademark Reg. No:

Opposition/Cancellation No:

The following items were received from Venable, Washington, D.C., by the U.S. Patent &amp; Trademark Office:

U.S. PTO FEES ENCLOSED

- ☐ Provisional Application Cover Sheet Transmittal Letter
- ☐ Fee Transmittal Letter
- ☐ New U.S. Provisional Application (19 pages of specification/10 claims/abstract)
- ☒ Formal Drawings (1 sheet for Figures 3A-3F)
- ☒ Submission of Formal Drawings
- ☐ Letter to Examiner
- ☐ Translation of International Application
- ☐ New U.S. TM Application (specimens)
- ☐ Rule 53(d) Continued Prosecution Application
- ☐ Letter Resubmitting Assignment
- ☐ Rule 53(b) Continuation or Divisional Application (*attach copy of specification, claims, drawings & declaration*)
- ☐ Priority Document-Cert. Copy of Appln.#: ; Country
- ☐ Date Filed:
- ☐ Request for Continued Examination (RCE) under 37 CFR 1.114
- ☐ Request for Reconsideration
- ☐ Application Data Sheet
- ☐ Assignment w/PTO Form 1595 Cover Sheet
- ☐ IDS w/PTO Form-1449
- ☐ Amendment and Reply under 37 C.F.R. §§ 1.111 and 1.121
- ☐ ☐ Amendment/☐ Preliminary Amendment
- ☐ Petition/Request for Extension of Time (one mo. ext.)
- ☐ Notice of Appeal
- ☐ Appeal Brief (*In triplicate*)
- ☐ ☐ Reply Brief (*In triplicate*) / ☐ Request for Oral Hearing
- ☐ Confirmation of Hearing Petition
- ☐ Issue Fee Transmittal
- ☐ Certificate of Correction
- ☐ Maintenance Fee Transmittal
- ☐ Power of Attorney
- ☐ Response to Notice to File Missing Parts
- ☐ Response to Notice to File Missing Requirements
- ☐ Response to Restriction Requirement
- ☐ Petition to Revive
- ☐ Sequence Listing - CDR Enclosed? ☐ Yes ☐ No
- ☐ Status Inquiry
- ☐ Copy of cover sheet submitted February 25, 2003 with date stamp filing receipt evidencing filing
- ☐ Request to Rescind Non-Publication Request
- ☐ A copy of the Notice of Non-Recordation of Document
- ☐ Return Postcard
- ☐ Other: (*Please describe below*)



- ☐ Filing Fee
- ☐ Surcharge Fee
- ☐ Additional Claim Fee
- ☐ Recordation/Indexing Fee
- ☐ IDS Fee
- ☐ Extension Fee
- ☐ Notice of Appeal Fee
- ☐ Brief on Appeal Fee
- ☐ Oral Hearing Request Fee
- ☐ Petition Fee
- ☐ Issue Fee
- ☐ Publication Fee
- ☐ Maintenance Fee
- ☐ TM Statement of Use
- ☐ 8 Affidavit Fee
- ☐ 8 and 15 Affidavit
- ☐ TM Renewal Application Fee
- ☐ Notice of Opposition Fee
- ☐ TM Extension of Time Fee

Total Fees Paid

\*If the Deposit Account was used, was a copy of this form sent to Accounting?

Check Number Attached  
Charge Deposit Account No. 22-0261\*

☐ Yes ☐ No

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Kaori TAI

Appl. No. 09/639,163  
Confirmation No. 3891

Filed: August 16, 2000

For: METHOD OF PRODUCING  
SEMICONDUCTOR DEVICES USING A  
HYDROGEN PEROXIDE-WATER  
MIXTURE (AS AMENDED)

Art Unit: 2823

Examiner: W. D. Coleman

Atty. Docket No. 32011-165642

Customer No.

26694

PATENT TRADEMARK OFFICE

**Submission Of Formal Drawings**

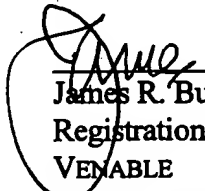
Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

In response to the Notice of Allowance mailed on July 31, 2003, Applicant submits herewith formal drawings for Figures 3(A)-3(F).

Respectfully submitted,

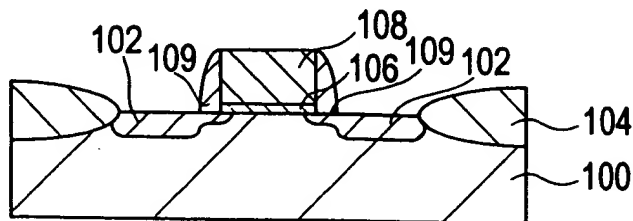
Date: 9/12/2003

  
James R. Burdett  
Registration No. 31,594  
VENABLE  
P.O. Box 34385  
Washington, D.C. 20043-9998

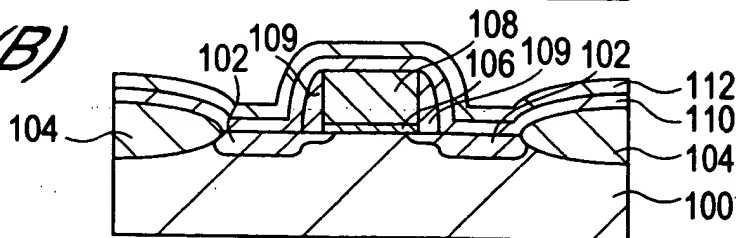
Telephone: (202) 962-4800  
Telefax: (202) 962-8300

#484375

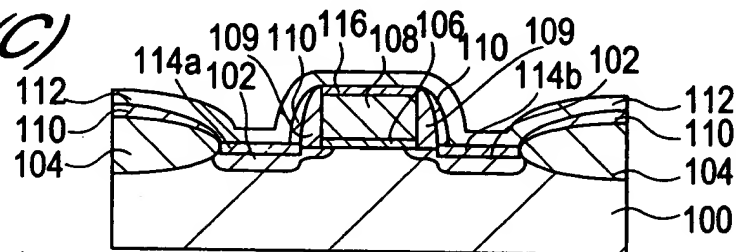
**FIG. 3(A)**  
PRIOR ART



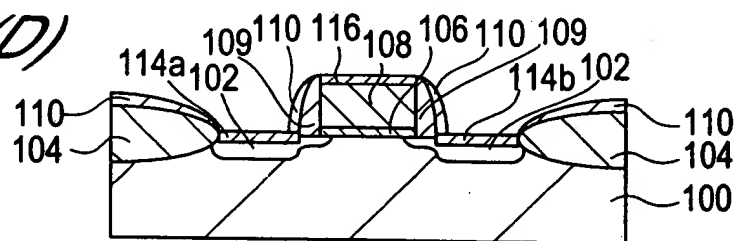
**FIG. 3(B)**  
PRIOR ART



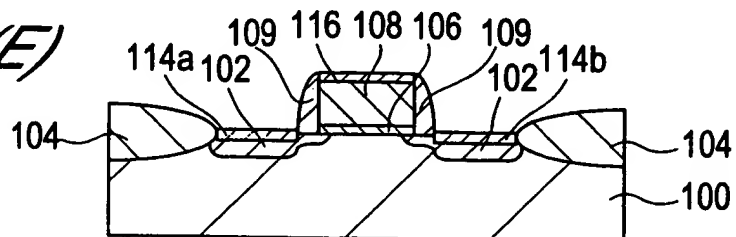
**FIG. 3(C)**  
PRIOR ART



**FIG. 3(D)**  
PRIOR ART



**FIG. 3(E)**  
PRIOR ART



**FIG. 3(F)**  
PRIOR ART

